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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,214	02/02/2001	Xuekui Lan	VALMET-5210	3652
36528	7590	07/26/2005	EXAMINER	
STIENNON & STIENNON 612 W. MAIN ST., SUITE 201 P.O. BOX 1667 MADISON, WI 53701-1667			BAREFORD, KATHERINE A	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/763,214

Applicant(s)

LAN ET AL

Examiner

Katherine A. Bareford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

*Claims 5-7 are canceled*

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The amendment of June 14, 2005 has been received and entered. As a result, claims 5-7 are canceled, new claims 11 and 12 are provided, and claims 1-4 and 8-12 are present for examination.

### *Claim Objections*

2. The objection to claim 9 because of informalities as to the use of "metering bar" rather than "metering rod" is withdrawn due to applicant's June 14, 2005 amendment to overcome this problem.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 10-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 10, lines 7-8, the claim has been amended to provide that the coating enters "through a plurality of diverging parallel holes aligned in a cross machine

direction". While support is provided for "through a plurality of parallel holes aligned in a cross machine direction" (see page 9A of the specification), no support is provided for "diverging" as to these holes, and thus the amendment contains new matter.

In claim 12, lines 1-3, a new claim has been provided claiming using "a flexible blade mounted in the coater head to form the baffle, the flexible blade defining the coating chamber and the recirculation channel". In the originally filed application support is only provided for such a flexible blade if it is mounted in the "stabilizer". As shown in figure 3, the blade is not mounted in the "baffle" (30, 30b). As a result, the claim contains new matter.

The other dependent claims do not cure the defects of the claims from which they depend.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 10, lines 7-8, the claim has been amended to provide that the coating enters "through a plurality of diverging parallel holes aligned in a cross machine

direction". It is vague and indefinite as to how the holes can be both "diverging" and "parallel".

In claim 11, as to the direction of rotation of the mertering rod; applicant should clarify that it rotates in the opposite direction at the point of impact with the web. Otherwise, as shown in figure 3 of applicant, the rolls are actually rotating in the same direction.

In claim 12, lines 1-3, a new claim has been provided claiming using "a flexible blade mounted in the coater head to form the baffle, the flexible blade defining the coating chamber and the recirculation channel". It is vague and indefinite as to how this could occur, as in claim 10, it is indicated that flow must be in an upstream direction over the baffle, while the recirculation chamber would require flow in a downstream direction. For the purposes of examination the Examiner has examined the claim as requiring the flexible blade to be mounted on a stabilizer as described in the specification and figure 3 and original claim 4.

The other dependent claims do not cure the defects of the claims from which they depend.

#### *Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. The rejection of claim 10 under 35 U.S.C. 102(b) as being anticipated by Eklund et al (US 4945855) is withdrawn due to applicant's amendments to the claims of June 14, 2005.

9. The rejection of claim 10 under 35 U.S.C. 102(b) as being anticipated by Sollinger et al (US 4834018) is withdrawn due to applicant's amendments to the claims of June 14, 2005.

10. The rejection of claims 1-3 under 35 U.S.C. 102(e) as being anticipated by Li et al (US 5824369) is withdrawn due to applicant's amendments to the claims of June 14, 2005.

*Claim Rejections - 35 USC § 103*

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund (US 4945855) in view of Holt et al (US 4396648).

Claims 1 and 10: Eklund teaches a method and apparatus for coating a traveling paper web with a film of coating. Figure 3 and column 1, lines 10-15. The web is supported on the surface of a rotatable backing roll. Figure 3 and column 3, lines 35-45 (drum 2). A fresh supply of coating is supplied into a coater head. Figure 3 and column 4, lines 30-40 (pipes 8 into chamber 7 and through duct 11). The inlet can have a first cross section. Figure 3 and column 5, lines 1-10 (note throttled inlet area 11a). The fresh supply of coating is directed into a mixing chamber area of the coater head. Figure 3 and column 5, lines 1-10 (mixing with recirculated coating occurs directly after area 11a). This mixing chamber area has a second cross section larger than the first cross section, so that the coating diverges as it enters. Figure 3 (note how the area after 11a is significantly wider<sup>R</sup> than 11a). The coating from the mixing chamber area is flowed through a feed channel in the coater head. Figure 3 (through the channel provided

between 4 and 14). This area is separate and distinct from the mixing area, as the V shape area of the "mixing chamber" narrows to the feed area between walls 4 and 14, which as shown has a third cross section smaller than the second cross section, so that coating moving from the mixing chamber to the feed chamber converges. Figure 3. The coating exiting the feed channel is divided into first and second portions. Figure 3 and column 4, lines 25-55). The first major portion is moved into a coating chamber area of the coater head. Figure 3 and column 4, lines 25-65 and column 2, lines 55-65 (the coating moves the area 27). The second smaller portion is directed over a baffle spaced from the paper web to define a gap therebetween. Figure 3 and column 4, lines 40-60 and column 2, lines 55-65 (over slot 12). The second portion is sufficient to seal the gap from air moving with the traveling web. Figure 3 and column 2, lines 55-65. The coating the coating chamber is flowed in the downstream direction while maintaining a pressurized interface between the coating and the paper web. Figure 3. The coating from the coating chamber is flowed into a recirculation chamber. Figure 3 and column 4, lines 25-45 (the coating passes into the area between wall 14 and blade 5). The coating from the recirculation chamber is directed into the mixing chamber. Figure 3 and column 4, line 60 through column 5, line 10 (flow 29 through slot 28). The direction of flow of coating from the recirculation chamber is at an acute angle to the direction of flow of the fresh supply of coating being directed into the mixing chamber. See figure 3. The coating from the recirculation chamber is mixed with the fresh coating in the mixing chamber. Figure 3 and column 5, lines 1-10.



Claim 2: Eklund does teach a flexible blade as required. See figure 3 (blade 5).

Claim 3: Eklund also teaches a stabilizer surface as required. See figure 3 (wall 14).

Eklund teaches all the features of these claims except the plurality of orifices linking the recirculation area and the mixing chamber and the plurality of inlet holes (claim 10).

Holt teaches that when paper coating and doctoring a coating provided to a coating chamber, it is desirable to pass flow that passes through channels in the form of flow through multiple parallel orifices. See figures 3-4 and column 6, line 50 through column 7, line 5. The use of the multiple orifices and a rotating roll is taught to help homogenize and shear the coating to improve the viscosity of the material and the uniformity of its application. *Column 6, line 50 through column 7, line 5.*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Eklund to use multiple orifices as suggested by Holt in order to provide a desirable viscosity of the coating material when passing through the inlet into the mixing chamber or when passing from the recirculation chamber to the mixing chamber, because Eklund teaches passing paper coating material to a coating chamber through an orifice and Holt teaches that when passing paper coating material through an orifice to a coating chamber, it is desirable to use multiple orifices. As to the diverging nature of the holes, the Examiner understands that Holt would show holes to

the extent claimed, given the confusion as to the diverging nature as discussed in the 35 USC 112 rejection above.

14. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund in view of Holt as applied to claims 1-3 and 10 above, and further in view of WO 97/08385 (hereinafter '385).

Eklund in view of Holt teaches all the features of these claims except for the flexible bade as part of the stabilizer.

However, '385 teaches a paper coating device, with a coating inlet and chamber, a stabilizer device and a later doctor blade. Figures 1 and 4 and pages 7-8. '385 teaches that the stabilizer can be formed with a flexible blade mounted to the coater head and having a distal end extending downstream. Figure 4 and paragraph bridging pages 11-12 (blade 114). The blade defines, with the surface of the backing roll, the coating chamber on one surface of the blade, and with the coater head, the recirculation chamber on the other side of the blade. Figure 4.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Eklund in view of Holt to use a flexible blade with the stabilizer as suggested by '385 in order to provide a desirable coating control, because Eklund in view of Holt teaches passing paper coating material to a coating chamber and past a stabilizer to a later doctor and '385 teaches that when passing paper coating

material to a coating chamber and past a stabilizer to a later doctor, it is desirable to provide a flexible blade with the stabilizer.

15. Claims 8-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund in view of Holt as applied to claims 1-3 and 10 above, and further in view of Elvidge et al (US 5376177).

Eklund in view of Holt teaches all the features of these claims except for use of a metering rod instead of a final doctor blade and the drive means.

However, Elvidge teaches a paper coating device, with a coating inlet and chamber, and a later doctor to meter the coating. Figures 1 and column 3, lines 35-65. The doctor can be either a rotatable doctor rod or a doctor blade. Column 3, lines 50-65. The doctor rod can be mounted to rotate in the opposite direction to the movement of the web, thus indicating that a drive means must be connected to the rod system in order to provide the drive for the rod, since it would not be rotated by the web. Figure 1 and column 4, lines 5-15.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Eklund in view of Holt to use a driven doctor rod as suggested by Elvidge in order to provide a desirable coating control, because Eklund in view of Holt teaches passing paper coating material to a coating chamber and past a stabilizer to a later doctor and Elvidge teaches that when passing paper coating material

to a coating chamber and to a later doctor, it is desirable to provide either a driven doctor rod or a doctor blade.

16. The rejection of claims 1-3 under 35 U.S.C. 103(a) as being unpatentable over Sollinger as applied to claim 10 above, and further in view of Holt et al (US 4396648) is withdrawn due to applicant's amendments of June 14, 2005.

17. The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over Eklund or Sollinger in view of Holt as applied to claims 1-3 above, and further in view of Li et al (US 5665163) (Li '163) is withdrawn due to applicant's statement of common ownership with regard to Li '163 in the amendment of June 14, 2005.

18. The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over Li as applied to claims 1-3 above, and further in view of Li et al (US 5665163) (Li '163) is withdrawn due to applicant's statement of common ownership with regard to Li and Li '163 in the amendment of June 14, 2005.

19. The rejection of claims 8-9 under 35 U.S.C. 103(a) as being unpatentable over Sollinger in view of Holt as applied to claims 1-3 above, and further in view of Elvidge et al (US 5376177) is withdrawn due to applicant's amendments to the claims of June 14, 2005.

20. The rejection of claims 8-9 under 35 U.S.C. 103(a) as being unpatentable over Li as applied to claims 1-3 above, and further in view of Elvidge et al (US 5376177) is withdrawn due to applicant's statement of common ownership with regard to Li in the amendment of June 14, 2005.

*Response to Arguments*

21. Applicant's arguments with respect to claims 4 and 12 have been considered but are moot in view of the new ground(s) of rejection.

As Li '163 was withdrawn as a rejection in view of applicant's statement of common ownership, WO 97/08385 has been cited as to claims 4 and 12. WO 97/08385 was published March 6, 1997, prior to applicant's earliest priority date.

22. Applicant's arguments filed June 14, 2005 have been fully considered but they are not persuasive.

As to the use of Eklund, applicant argues that Eklund does not suggest a mixing chamber as set forth in claim 1. As to claim 10, applicant argues that Eklund does not provide the plurality of parallel holes into the mixing chamber as claimed or the orifices from the recirculation chamber, or the diverging flow from the mixing chamber to the feed channel.

The Examiner has reviewed these arguments, however, the rejection is maintained. As to the mixing chamber requirements of Eklund, it does provide a mixing chamber as required by claim 1. As discussed in the rejection above,

VB The inlet can have a first cross section. Figure 3 and column 5, lines 1-10 (note throttled inlet area 11a). The fresh supply of coating is directed into a mixing chamber area of the coater head. Figure 3 and column 5, lines 1-10 (mixing with recirculated coating occurs directly after area 11a). This mixing chamber area has a second cross section larger than the first cross section, so that the coating diverges as it enters. Figure 3 (note how the area after 11a is significantly wider than 11a). The coating from the mixing chamber area is flowed through a feed channel in the coater head. Figure 3 (through the channel provided between 4 and 14). This area is separate and distinct from the mixing area, as the V shape area of the "mixing chamber" narrows to the feed area between walls 4 and 14, which as shown has a third cross section smaller than the second cross section, so that coating moving from the mixing chamber to the feed chamber converges. Figure 3.

This provides a mixing chamber to the extent required. As to the use of the parallel holes for inlet into the mixing chamber and the orifices from the recirculation chamber, the Examiner has cited Holt as to this issue as discussed in the rejection above. As to the "diverging" from the mixing chamber to the feed channel, claim 10 actually requires converging flow (see claim 10, line 9), and the use of this converging flow is discussed in the excerpted paragraph above.


### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
KATHERINE BAREFORD  
PRIMARY EXAMINER